Tube-Feeding Formula

Milk	800 cc.
Lactose	200 gm.
Eggs	4
Peptone	24 gm.
Salt	5 gm.
Cevitamic acid	50 mgm.
Cod-liver oil concentrate	20 drops
Vitamin B1 crystals	2 mgm.

One hour after the tube has been inserted start formula as a slow continuous drip. If vomiting occurs, reinsert tube and wait one hour, with the patient on right side before starting drip. Give phenobarbital, dilute HCl, or Lugol's solution, if indicated, through the tube. Maintain the fluid intake up to 3,500 cubic centimeters per day by hypodermoclysis of normal saline or Ringer's solution; or, if acetone and diacetic acid in the urine, 20 per cent glucose by intravenous drip. The glucose may be covered with insulin.

IV. SEVERE TYPE

Nothing by mouth, except small amount of cracked ice. Bed rest; temperature, pulse, respiration, every four hours. Measure intake and output. Transfusion, if hemoglobin is 70 per cent or less, sodium phenobarbital, grains four, hypodermic, then two grains every six hours until drowsy; then every eight hours for two days. Sodium bromid crystals, 75 grains in 100 cubic centimeters of starch water, as a retention enema, the first night. Give 1,000 cubic centimeters 20 per cent glucose infusion twice daily, over a period of ninety minutes. Get CO_2, urea and NaCl blood chemistry at the time of the infusion each morning; 1,000 cubic centimeters of normal saline by hypodermoclysis twice daily, alternating between subpectorally and in the thighs, always several hours, after the glucose. (Use procain wheal.) Hartman's solution may be added if acidosis or alkalosis is present. Daily urine examination for acetone and diacetic acid. Eye-grounds examination. If no improvement, interruption of the pregnancy should be considered.

233 A Street.

SULFANILAMID: A SPECIFIC FOR THE FRIEDLANDER BACILLUS

By PHILIP KING BROWN, M.D.
San Francisco

ONE case can rarely be considered the ground for drawing so definite a conclusion as the title indicates, but the history of the case makes it remarkable.

REPORT OF CASE

Miss B. K. had her tonsils removed in February, 1917, following which she developed a condition in the right lung which proved later to be an abscess. The abscess was in about the middle of the right lung field toward the back, and was considered to be in the upper part of the right lower lobe. Pleurisy developed under the right shoulder blade. Partly to relieve that pain, and because the abscess did not drain well, the use of a small pneumothorax was attempted successfully, and it was found promptly that the abscess both discharged better and there was no tendency to spread. A moderate pneumothorax was kept up until all discharge ceased, and the lung field seemed to be definitely clearing. The nature of the infecting organism was not determined.

Following the expansion of the lung there developed a slight cough and expectoration, and a lipiodol injection showed that there was a definite dilatation of the large bronchus extending from the middle of the hilus, definitely toward the back in the vicinity of the shoulder blade. The use of the lipiodol relieved the green expectoration for a considerable period of time, although it did not disappear entirely. A fresh cold would increase the amount from one to two drams a day to several ounces. On numerous occasions this was cultured, and a pure growth of Friedlander bacillus was found. In the seventeen years which followed the abscess there continued constantly to be a small amount of expectoration when the patient was quite well, which was increased decidedly following every cold, and was not relieved until lipiodol was put into the dilated bronchus. There continued to be a slight increase in the pain under the lower end of the right shoulder blade.

The patient all these years worked as a private secretary, but was constantly annoyed by the sweetish-green expectoration which showed so ready a tendency to increase with every slight cold.

In the summer of 1937, after a severe cold, she was instructed to spend two weeks at an elevation of 2,500 feet in a hot, dry locality, doing all she could with postural drainage and iodid of potash. At the end of a week no material benefit having resulted in the way of lessening the amount of expectoration, which was between two and three ounces a day, she was instructed to take sulfanilamid in the following doses: 30 grains the first day, 45 the second, and 60 the third, dropping back to 45 grains, and 30 on the fifth day. At the end of the third day there was absolutely no expectoration, and the pain in her back disappeared. She kept in touch with me, although several hundred miles away, and was instructed to continue taking small doses for a while longer.

Six months have gone by and there has been no evidence whatever of any return of the expectoration. She has had several slight colds, but has promptly taken small doses of sulfanilamid, and none of them have resulted in the productive cough.

COMMENT

The case is reported because the cultures were made by Dr. A. M. Moody, pathologist of the Saint Francis Hospital, during all this period. The result was so absolutely clean-cut that it seems to the writer worth putting on record.

We have since tried the drug once on an arrested case of tuberculosis, with a left upper thoracoplasty which had not completely stopped the productive cough. Friedlander organisms predominated in the sputum and no tubercle bacilli have been found for years. A cautious trial of sulfanilamid was made after a fresh cold which increased the amount of sputum, and again a remarkable drop in the amount resulted at once. As the tendency to the production of fibrosis is one of the characteristics of this organism, the problem presented itself as to whether the removal of one or two more ribs was a safer treatment than continuing the use of this drug. The patient in the meantime was not pressed for any decision in the matter. The newspaper publicity about sulfanilamid disturbed him, and he had no great desire to undergo further surgery.

909 Hyde Street.

NECROPSIES IN HOSPITALS IN SAN FRANCISCO*

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AND
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IT has been the custom for some years in certain of the large cities of the United States to survey and report the necropsies performed, together with the numbers credited to each hospital in that locality, and the percentage of permissions obtained. In order to make this information available for use in San Francisco, an effort was made at the beginning of 1937 to collect the necessary statistics with which to formulate a table presenting salient facts relating to necropsies.

* From the Department of Public Health, City and County of San Francisco.

Eighteen of the forty-five hospitals listed in the San Francisco area responded to the questionnaire, supplying information in detail for 1936, and partial information for the previous years. From the data received, the percentage of permission obtained for necropsies is shown in Table 1, together with a more detailed analysis of the data furnished for the year 1936. In that year the capacity of the reporting hospitals was 4,344 beds, and 82,758 patients were treated, and 3,989 deaths occurred. Total necropsies performed, by consent, in these hospitals were 1,331, and the number of cases referred to the coroner's office from these hospitals was 482. Of the cases referred to the coroner, the hospitals have record of forty necropsies performed at the coroner's office. The percentage of permissions obtained for the San Francisco area was 33.3 per cent in 1936, and the average in the past ten years for each of the hospitals furnishing complete data is listed in Table 2.

In computing the percentage of permission obtained for necropsies, the figure taken for the number of deaths is the actual number recorded (not including stillbirths). In one hospital no record of necropsies has been kept. Another hospital reported no facilities for performing necropsies. Two other hospitals reported insufficient data from which to evolve statistical information, and in another no necropsies were performed on consent, presumably because of racial objections. Ten hospitals reported that the pathologist spends full time (six to eight hours per day) in the pathological laboratory within the hospital. Three others reported that the pathologist spends part time (four hours or more per day) in the laboratory, while five others have no pathologist. In all of the

TABLE 1.—*Necropsy Report for San Francisco Hospitals*

Hospitals	1936 Necropsies					Percentage Permission								
	Beds*	Patients	Deaths	Permits	To Coroner's	Coroner's	1936	1935	1934	1933	1932	1931	1930	1929	1928
Children's	259	5,031	119	61			51.2	26.4	30.0	48.9	43.7	38.6	37.6	26.7	33.1
Chinese	65	532	67		2		No necropsies on consent								
Dante							No facilities for performing necropsies								
Franklin		3,340	227	20	18		8.8	11.9	2.8	8.0	2.3	1.7	1.6	1.0	.....
French	225	3,790	159	47	17		29.5	26.4	26.8	29.3	23.4	34.7	20.4	13.4	.....
Garden Nursing Home		152	42				No record of necropsies								
Mount Zion	189	3,907	206	77	12	5	37.3	49.1	51.5	49.7	46.4	42.6	36.3	24.1	23.4
St. Elizabeth's							Insufficient data								
St. Francis	354	7,038	262	31			11.8	8.1	13.9	13.7	25.0	27.6	28.4	17.3	8.1
St. Joseph's	232	7,058	226	36			15.9	17.4	17.7	21.0	22.2	19.7	21.3	25.0	28.4
St. Luke's	225	5,584	201	85			42.3	30.2	37.2	33.3	32.5	32.0	12.7	21.5	19.0
St. Mary's	325	8,822	258	67	15	15	25.9	18.5	11.3	14.7	18.1	13.9	15.8	23.2	17.4
San Francisco	1,516**	14,251	1,394	515	365		†36.9	41.5	43.0	48.2	39.4	32.1	32.9	48.3	23.6
Shriners							Insufficient data								
Southern Pacific		4,558	153	68	19		44.4	31.4	40.3	56.9	55.9	56.2	38.3	34.5	41.0
Stanford	324	9,635	259	140	14		54.0	56.1	46.1	48.9	58.1	45.5	43.9	38.5	42.4
U. C. Hospital	294	6,262	191	105	13	13	†54.9	65.7	69.9	63.3	73.0	61.2	52.1	51.8	38.5
Veterans' Administration Facility	336**	2,298	225	79	7	7	35.1	30.2	5.5	Opened September 26, 1934					

* Beds include bassinets except in those hospitals showing a double asterisk (**).
† These figures are for fiscal years beginning July, 1927.

TABLE 2.—*Shows Average Percentage Permission in the Past Ten Years for Each of the Hospitals Furnishing Complete Data.*

University of California	58.9	
Stanford-Lane	48.1	
Southern Pacific	44.3	
Mount Zion	40.0	
San Francisco	38.4	
Children's	37.3	
Veterans' Administration Facility	31.4	(2¼ years)
St. Luke's	28.9	
French	25.4	
St. Joseph's	20.9	
St. Mary's	17.6	
St. Francis	17.1	
Franklin	4.7	(8 years)

hospitals, either the pathologist or an assistant under his supervision makes each necropsy, except in rare instances, in which they are performed by certain members of the house staff. All hospitals in San Francisco, with either full or part-time pathologists, have kept permanent records which are available for inspection of gross and microscopic findings in each case. Likewise, the following hospitals report the holding of weekly pathological conferences: University of California, Stanford, San Francisco, French, and Mount Zion. In addition, the St. Francis Hospital reports conferences every two weeks; and the Garden Nursing Home, St. Joseph's, St. Luke's, St. Mary's, Children's, Chinese, Franklin, and the Southern Pacific Hospital report one conference each month.

It will be noted in Table 1 that there has been a gradually ascending necropsy percentage in San Francisco during the past nine years; and, while not shown statistically, the interest in clinico-pathological conferences and in pathological teaching has kept abreast of this statistical level.

At present a system of tabulation is instituted in the San Francisco Department of Public Health whereby such figures are available at all times.

Department of Public Health,
Civic Center.

TYPHOID SEPTICEMIA TREATED WITH SULFANILAMID

By W. E. DIEFENBACH, M.D.
AND
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BUTTE and his coworkers[1] have found that the survival period of mice infected with many lethal doses of Bacillus typhosus was lengthened or they were entirely protected by the administration of sulfanilamid. It is, consequently, of interest to record the effect of this therapeutic agent upon a septicemia in man due to Bacillus typhosus.

REPORT OF CASE

History.—A. L., a white man, age twenty-one, was admitted to the hospital on January 2, 1938, complaining of chills, fever, loss of appetite, lassitude, and a mild headache. He had enjoyed excellent health until November, 1937, when he had an attack of appendicitis while in Colorado. An acute respiratory infection postponed operative intervention at that time, but an appendectomy was finally done and a stormy time followed a perforated appendix. He gradually improved, gained in weight and strength, and came to California. His convalescence was satisfactory until January 1, when he felt tired and below par.

1 Butte, G. A. H., Parish, H. J., McLeod, M., and Stephenson, D.: Chemotherapy (Sulfanilamid) in Mice, Lancet, 1:681-684 (March), 1937.

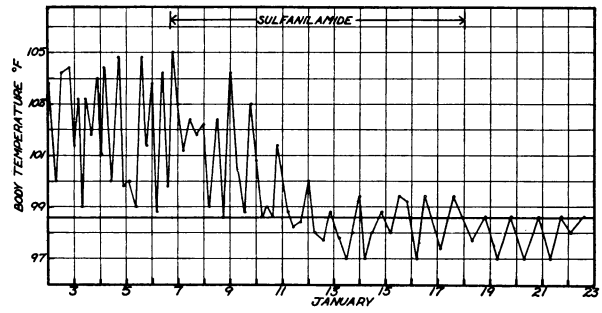

Chart 1

Examination.—The patient was well developed, fairly well nourished, pale, mentally clear, and alert. The skin was clear, no rose spots and no embolic or hemorrhagic manifestations. There was no unusual adenopathy. The temperature was 104.6 degrees; pulse 100; blood pressure, systolic 104 and diastolic 60. There were no abnormal findings in the head, neck, thorax or extremities. There was a recent scar in the right lower quadrant of the abdomen. There was no muscle spasm or no abnormal masses felt. Neither the liver edge nor spleen could be definitely palpated. There was no tenderness in either costovertebral angle. The first blood count (January 3) showed: hemoglobin, 75 per cent; red blood cells, 3,700,000; white blood cells, 6,550 with 67 per cent polymorphonuclears, 30 per cent lymphocytes, and 2 per cent monocytes. The urine showed only a faint trace of acetone. Specimens of blood were taken on January 4 for cultures.

Course.—The patient continued to have severe chills—three to four in twenty-four hours—and fever ranging from 97.8 to 105 degrees Fahrenheit for the next three days. His condition gradually became worse. On January 6 the broth culture and one poured plate gave a motile Gram-negative bacillus. Growths on Endo and Russell double sugar media were typical of Bacillus typhosus, and eliminated Bacillus coli, and Paratyphoid bacilli motility eliminated the dysentery group. Agglutination test—Antityphoid serum agglutinates, 1:2560. On January 7 we started to give him ten grains of sulfanilamid every four hours. On January 8 the temperature varied from 101.2 to 102.4 degrees Fahrenheit, without any chills. Because of a marked nausea present the next day, the dosage of sulfanilamid was cut down to one-half or five grains every four hours. That same evening he had a severe chill and the temperature rose from 98.6 to 104.2 degrees Fahrenheit. So the next morning, January 10, he was placed again on ten grains every four hours. The patient began to show a marked improvement, as his temperature dropped and the chills did not recur. At the end of a week's treatment the temperature was almost normal, rising to 98.8 degrees Fahrenheit. During the second week of treatment the patient had an afternoon temperature of only 99.4 degrees Fahrenheit, and showed a marked improvement in his general condition. The sulfanilamid was stopped on January 18. After this his temperature ranged from normal to subnormal. On January 28 the patient was dismissed with a normal temperature.

Examination of the stools and urine failed to reveal the Bacillus typhosus. Likewise, the Widal test was negative. Daily blood and urine examinations were made during the course of treatment. Roentgen examinations of the chest and abdomen were negative.

COMMENT

It was our impression that there were two possible explanations for this illness. First, that this may represent a very questionable atypical typhoid fever. Secondly, and more probable, was that the organism was present in the intestinal tract at the time of the peritonitis, and localized to form an abscess possibly in one or more retroperitoneal lymph nodes with a gradual softening and systemic invasion. There was no evidence pointing to liver abscess, subdiaphragmatic abscess, perirenal abscess, pararectal abscess, nor pyelitis.